

Abstract Submitted
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The Frequency of Anomalous H Beta Responses During Long-term Reverberation Mapping of NGC 5548¹ JULIA DEFFNER, Menlo School, KAYLA BARTEL, The Bay School of San Francisco, C. MARTIN GASKELL, University of California, Santa Cruz, IRIS XIA, Monta Vista High School — In the standard model of reverberation mapping for AGNs, broad-line region (BLR) fluxes can be predicted by convolving optical continuum variability (a proxy for ionizing continuum variations) with a response function determined by the geometry of the emitting and reprocessing regions. However, the recent Space Telescope monitoring of NGC 5548 revealed anomalous responses of the BLR in NGC 5548 where BLR variability deviated from continuum predictions. To further investigate this, we analyze H β and continuum observations of NGC 5548 covering 13 years. We find that while the integrated H β flux generally follows optical continuum variability for the 13-year data set as a whole, there are deviations of the order of +/- 10% in the total line flux almost every year on timescales of weeks to months and longer. These anomalies show no obvious correlations with continuum variability. Our study shows that anomalous responses are common in NGC 5548. The strong variability at times of a very narrow velocity range of the line favors the off-axis continuum variability model of Gaskell (2008, 2010).

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